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(54) METHOD FOR DISPLAYING OPERATION SCREEN, PICTURE INPUT DEVICE, PICTURE OUTPUT MANAGEMENT DEVICE AND PICTURE OUTPUT SYSTEM

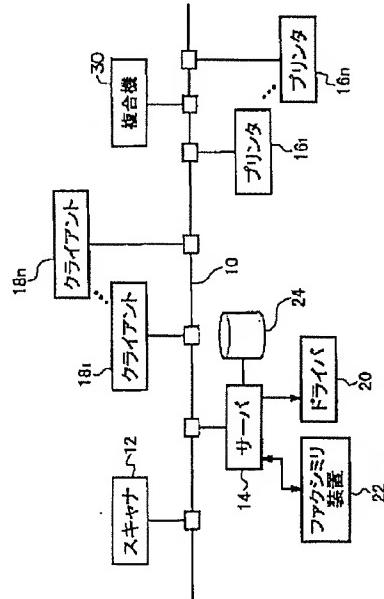
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(57) Abstract:

PROBLEM TO BE SOLVED: To efficiently operate an operation screen by using the operation screen common to plural output devices provided with different attributes to display the OR and AND of the attributes belonging to the plural picture output devices on this operation screen.

SOLUTION: Plural printers 16, a server 14 and a scanner 12 are connected to a network 10. The server 14 calculates the OR or AND of the attribute information of the printers 16 based on the attribute information of each of the plural printers 16 to generate an operation screen generation signal and transmits it to the scanner 12. The scanner 12 inputs picture data, and the common operation screen generated based on the operation screen generation signal displayed on a display panel. Information for designating the printer 16 and information on the output form of the picture are inputted from the display panel and transmitted to the server 14. The server 14 transmits the information on the output form of the picture and the picture data to



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CLAIMS

[Claim(s)]

[Claim 1] An operation screen displaying method which is an operation screen displaying method which displays an operation screen to two or more image output devices provided with a different attribute, and displays an operation screen based on a result of a logical operation to an attribute which said two or more image output devices have.

[Claim 2] The operation screen displaying method according to claim 1 in which said logical operation is an AND operation or OR operation.

[Claim 3] The operation screen displaying method according to claim 1 or 2 with which said two or more image output devices have said logical operation and which is performed for every attribute item.

[Claim 4] It is connected to two or more image output devices which it is respectively connected to a network and output a picture based on image data transmitted via said network, and information about an output form of a picture, and said network, and. an operation screen which displays attribution information common to two or more image output devices which fulfill specified conditions based on said two or more attribution information of each image output device. And a signal generating operating screen for generating at least one side of an operation screen which displays all the attribution information which two or more image output devices which fulfill specified conditions have is transmitted, And an image output control apparatus which transmits to an image output device which had information about an output form and said image data of a picture received via said network specified, Are a picture input device used for preparation *****, and input information which specifies conditions of an operation screen displayed as an image data input device for inputting said image data, and. An operation screen which is an operation screen generated based on said signal generating operating screen, and displays attribution information common to two or more image output devices which fulfill specified conditions, And at least one operation screen of an operation screen which displays all the attribution information which two or more image output devices which fulfill specified conditions have is displayed, It is connected with a display input device for inputting information which specifies an image output device which outputs said picture from a displayed operation screen, and information about an output form of a picture outputted from a specified image output device at said network, and. A picture input device which image data inputted from information inputted from said display input device and said image data input device was transmitted via said network, and was provided with transceiving equipment which receives said signal generating operating screen via said network.

[Claim 5] The picture input device according to claim 4 which displays attribution information exceeding a predetermined value under one attribute item when the number of attribution information displayed on said operation screen becomes beyond a predetermined value.

[Claim 6] The picture input device according to claim 5 which displays in detail attribution information which provides an interface part article which displays said attribute item, and exceeds said predetermined value according to operation to this interface part article.

[Claim 7] Two or more image output devices which it is respectively connected to a network and output a picture based on image data transmitted via said network, and information about an output form of a picture, Input information which specifies conditions of an operation screen displayed as an image data input device for inputting said image data, and. An operation screen which is an operation screen generated based on said signal generating operating screen, and displays attribution information common to two or more image output devices which fulfill specified conditions, And at least one operation screen of an operation

screen which displays all the attribution information which two or more image output devices which fulfill specified conditions have is displayed, It is connected with a display input device for inputting information which specifies an image output device which outputs said picture from a displayed operation screen, and information about an output form of a picture outputted from a specified image output device at said network, and. Transmit image data inputted from information inputted from said display input device, and said image data input device to said image output control apparatus via said network, and. It is an image output control apparatus used for an image output system provided with transceiving equipment which receives a signal which generates said operation screen via said network. it being connected to said network and based on said two or more attribution information of each image output device, An operation screen which displays attribution information common to two or more image output devices which fulfill specified conditions, And a signal generating operating screen for generating at least one side of an operation screen which displays all the attribution information which two or more image output devices which fulfill specified conditions have is transmitted, And an image output control apparatus which transmits to an image output device which had information about an output form and said image data of a picture received via said network specified.

[Claim 8]The image output control apparatus according to claim 7 which chooses one image output device from said two or more image output devices based on information about an output form of a picture inputted from this operation screen when displaying all the attribution information which two or more image output devices which fulfill specified conditions have on an operation screen.

[Claim 9]Two or more image output devices which it is respectively connected to a network and output a picture based on image data transmitted via said network, and information about an output form of a picture, Input information which specifies conditions of an operation screen displayed as an image data input device for inputting said image data, and. An operation screen which is an operation screen generated based on said signal generating operating screen, and displays attribution information common to two or more image output devices which fulfill specified conditions, And at least one operation screen of an operation screen which displays all the attribution information which two or more image output devices which fulfill specified conditions have is displayed, It is connected with a display input device for inputting information which specifies an image output device which outputs said picture from a displayed operation screen, and information about an output form of a picture outputted from a specified image output device at said network, and. Transmit image data inputted from information inputted from said display input device, and said image data input device to said image output control apparatus via said network, and. It is connected to transceiving equipment which receives a signal which generates said operation screen via said network, and said network, and. an operation screen which displays attribution information common to two or more image output devices which fulfill specified conditions based on said two or more attribution information of each image output device. And a signal generating operating screen for generating at least one side of an operation screen which displays all the attribution information which two or more image output devices which fulfill specified conditions have is transmitted, And an image output system provided with an image output control apparatus which transmits to an image output device which had information about an output form and said image data of a picture received via said network specified.

DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[Field of the Invention] This invention relates to an operation screen displaying method, a picture input device, an image output control apparatus, and an image output system, and in more detail, Two or more printers connected to the network, the scanner which reads the picture of a manuscript, And it is related with the image output system provided with the printer server, an operation screen displaying method usable with this image output system, the image output control apparatus of this image output system, and the picture input device of this image output system.

[0002]

[Description of the Prior Art] The conventional copying machine reads the image of the manuscript laid in the manuscript stand by CCD (Charge CoupledDevice), and records a latent image on a photoconductive drum using a semiconductor laser, The picture is outputted by developing the latent image on a photoconductive drum using an electrophotography process, and transferring on a paper. The small display panel of composition of that the touch panel piled up is provided on the display panel which becomes this copying machine from a liquid crystal display panel as a user interface. Therefore, the amount of information and the density of the information which can be set up which can be simultaneously displayed on a display panel have restriction.

[0003]

[Problem(s) to be Solved by the Invention] In constituting the network printer which connects two or more printers to a network, and enabled it to output a picture from each printer on the other hand, Constituting from a printer server which transmits the image data which received from the scanner which is a reader which reads a manuscript, and the scanner to the printer which processed suitably and was specified is assumed. In order to usually connect one set of this scanner to a network, to have a function like the image read function of the copying machine used alone and to output efficiently, The display panel as a user interface provided in the copying machine and the same display panel are provided in a scanner, and it is possible to specify the printer which outputs a picture from this display panel, or to be constituted so that an output form can be specified. However, it was not efficient when it constituted a network printer, even if it applied [display panel / which was provided in the present scanner] the display panel of the copying machine which the amount of information and the density of the information which can be set up which can be displayed simultaneously have restriction, and is used alone as it is.

[0004] On a network, generally various kinds of printers with which the attributes of a model, a function, a maker, a network address, etc. differ are connected, and the demand which tries to output still more efficiently is by performing output instruction which is different from a specific part to the various printers with which these attributes differ. However, since the kind of operation screen increased as it is necessary to display the operation screen according to various printers on a display panel and the kind of printer increases, in order to realize such a system, there was a problem that it became difficult to operate an operation screen efficiently.

[0005] On the other hand, in order to carry out the operation screen displayed on a display panel in common, connecting a printer of the same kind to a network is also considered, but. Even if it connects the printer of the same maker to a network, in order to meet various kinds of output requests, it is difficult to be intermingled, to connect a monochrome printer, a color printer, and the printer with which resolution differs, and to carry out an operation screen in common.

[0006] The printer to output cannot be chosen, if there is no telling which printer is provided with the same function even if a user is going to get printed matter from two or more printers by the same output form based on the same image data when the printer with which functions differ is intermingled and is connected. The printer which has special functions, such as an output in the

paper size besides a fixed form, may need to be searched.

[0007] This invention is made in order to cancel the above-mentioned problem, and it is a thing.

An operation screen common about two or more image output devices provided with the purpose is used, and it is providing the operation screen displaying method, the picture input device, image output control apparatus, and image output system which enabled it to operate the operation screen efficiently.

[0008]

[Means for Solving the Problem] To achieve the above objects, the operation screen displaying method according to claim 1, It is an operation screen displaying method which displays an operation screen to two or more image output devices provided with a different attribute, and an operation screen is displayed based on a result of a logical operation to an attribute which said two or more image output devices have. Said logical operation can be made into an AND operation or OR operation in this operation screen displaying method. Said logical operation can be performed for every attribute item which said two or more image output devices have.

[0009] The picture input device according to claim 4 is provided with the following.

Two or more image output devices which it is respectively connected to a network and output a picture based on image data transmitted via said network, and information about an output form of a picture.

it being connected to said network and based on said two or more attribution information of each image output device, An operation screen which displays attribution information common to two or more image output devices which fulfill specified conditions, And a signal generating operating screen for generating at least one side of an operation screen which displays all the attribution information which two or more image output devices which fulfill specified conditions have is transmitted, And an image output control apparatus which transmits to an image output device which had information about an output form and said image data of a picture received via said network specified.

Are a picture input device used for an image output system which it had, and input information which specifies conditions of an operation screen displayed as an image data input device for inputting said image data, and. An operation screen which is an operation screen generated based on said signal generating operating screen, and displays attribution information common to two or more image output devices which fulfill specified conditions, And at least one operation screen of an operation screen which displays all the attribution information which two or more image output devices which fulfill specified conditions have is displayed, It is connected with a display input device for inputting information which specifies an image output device which outputs said picture from a displayed operation screen, and information about an output form of a picture outputted from a specified image output device at said network, and. Transceiving equipment which image data inputted from information inputted from said display input device and said image data input device is transmitted via said network, and receives said signal generating operating screen via said network.

[0010] In the above-mentioned picture input device, when the number of attribution information displayed on said operation screen becomes beyond a predetermined value, attribution information exceeding a predetermined value can be displayed under one attribute item. An interface part article which displays the attribute item can be provided, and attribution information which exceeds said predetermined value according to operation to this interface part article can be displayed in detail.

[0011] The image output control apparatus according to claim 7 is respectively connected to a network, and. Two or more image output devices which output a

picture based on image data transmitted via said network, and information about an output form of a picture, Input information which specifies conditions of an operation screen displayed as an image data input device for inputting said image data, and. An operation screen which is an operation screen generated based on said signal generating operating screen, and displays attribution information common to two or more image output devices which fulfill specified conditions, And at least one operation screen of an operation screen which displays all the attribution information which two or more image output devices which fulfill specified conditions have is displayed, It is connected with a display input device for inputting information which specifies an image output device which outputs said picture from a displayed operation screen, and information about an output form of a picture outputted from a specified image output device at said network, and. Transceiving equipment which image data inputted from information inputted from said display input device and said image data input device is transmitted to said image output control apparatus via said network, and receives a signal which generates said operation screen via said network, Are an image output control apparatus used for preparation *****, and it is connected to said network, and. an operation screen which displays attribution information common to two or more image output devices which fulfill specified conditions based on said two or more attribution information of each image output device. And a signal generating operating screen for generating at least one side of an operation screen which displays all the attribution information which two or more image output devices which fulfill specified conditions have is transmitted, And it transmits to an image output device which had information about an output form and said image data of a picture received via said network specified.

[0012]When displaying all the attribution information which two or more image output devices which fulfill specified conditions have on an operation screen, the above-mentioned image output control apparatus, Based on information about an output form of an inputted picture, one image output device can be chosen from this operation screen from said two or more image output devices.

[0013]The image output system according to claim 9 is provided with the following.

Two or more image output devices which it is respectively connected to a network and output a picture based on image data transmitted via said network, and information about an output form of a picture.

An image data input device for inputting said image data.

Information which specifies conditions of an operation screen to display is inputted, and it is the operation screen generated based on said signal generating operating screen, An operation screen which displays attribution information common to two or more image output devices which fulfill specified conditions, And at least one operation screen of an operation screen which displays all the attribution information which two or more image output devices which fulfill specified conditions have is displayed, It is connected with a display input device for inputting information which specifies an image output device which outputs said picture from a displayed operation screen, and information about an output form of a picture outputted from a specified image output device at said network, and. Transmit image data inputted from information inputted from said display input device, and said image data input device to said image output control apparatus via said network, and. an operation screen which displays attribution information common to transceiving equipment which receives a signal which generates said operation screen via said network, and two or more image output devices which it is connected to said network and fulfill specified conditions based on said two or more attribution information of each image output device. And a signal generating operating screen for generating at least one side of an operation screen which displays all the attribution information which two or more image output devices which fulfill specified conditions have is transmitted, And an image output control apparatus which transmits to an image output device which had information about an output form and said image data of a

picture received via said network specified.

[0014] In each of above-mentioned inventions, a picture input device and ** provided with two or more image output devices, an image output control apparatus, an image data input device and a display input device, and transceiving equipment are connected to a network. An image output control apparatus based on two or more attribution information of each image output device, An operation screen for displaying attribution information common to two or more image output devices which fulfill specified conditions, And a signal generating operating screen for generating at least one side of an operation screen for displaying all the attribution information which two or more image output devices which fulfill specified conditions have is generated, it transmits to transceiving equipment, and transceiving equipment receives this signal generating operating screen via a network. Attribution information common to two or more image output devices is acquired from a logical product of the attribute of two or more image output devices, and all the attribution information which two or more image output devices have is acquired from logical sum of the attribute of two or more image output devices. It is the operation screen which image data was inputted from an image data input device, and was generated based on a signal generating operating screen, At least one operation screen of an operation screen for displaying attribution information common to two or more image output devices which fulfill specified conditions, and an operation screen for displaying all the attribution information which two or more image output devices which fulfill specified conditions have is displayed on a display input device.

[0015] And information which specifies conditions of an operation screen to display is inputted, and information which specifies an image output device which outputs a picture from a displayed operation screen, and information about an output form of a picture outputted from a specified image output device are inputted into a display input device. Image data inputted from information and an image data input device which were inputted from this display input device is transmitted to an image output control apparatus via a network by transceiving equipment. An image output control apparatus transmits to an image output device which had information and image data about an output form of a picture transmitted from transceiving equipment specified. An image output device outputs a picture based on image data transmitted via a network, and information about an output form of a picture.

[0016] Since an operation screen common about two or more image output devices which were provided with a different attribute as for this passage is used and a result of a logical operation to an attribute which two or more image output devices have in this operation screen is displayed, selection of an output condition becomes easy and an operation screen can be operated efficiently. For example, in the case of an equivalent output or a multiple address output, if a logical product of an attribute which two or more image output devices have is displayed and an attribute is chosen in the range of a logical product, it will be guaranteed that the same output is obtained from two or more image output devices. Logical sum of an attribute which two or more image output devices have can be displayed, and a total range of a selectable attribute can also be shown. A logical operation can be performed for every attribute item which two or more image output devices have.

[0017] When displaying all the attribution information which two or more image output devices which fulfill conditions specified especially have on an operation screen, Since one image output device is chosen from the operation screen from two or more image output devices based on information about an output form of an inputted picture, a desired attribute can be chosen from a total range of a selectable attribute, and the most suitable output can be obtained.

[0018] When the number of attribution information displayed on an operation screen becomes beyond a predetermined value, attribution information exceeding a

predetermined value can be displayed under one attribute item. An interface part article which displays this attribute item can be provided, and attribution information which exceeds said predetermined value according to operation to this interface part article can also be displayed in detail. It is guaranteed that a total range of a selectable attribute is displayed by this.

[0019]

[Embodiment of the Invention] Hereafter, with reference to Drawings, an embodiment of the invention is described in detail. As shown in drawing 1, the printing system of this embodiment, The scanner 12 as an image data input device which inputs image data into the network 10 which comprised the Internet, LAN, etc., the server 14, printer 161 that are two or more image output devices, 162 and ... 16n and two or more client 181, 182, and ... 18n is connected and it is constituted. This image data is expressed with TIFF (Tagged Image File Format) form, for example. The composite machine 30 which has a print function, a scanner function, and a facsimile function is connected to the network 10.

[0020]The scanner part 12A provided with CCD which reads the picture recorded on the manuscript as the scanner 12 is shown in drawing 2, The display panel 12B which functions as a user interface which inputs the data of the printing form (output form) of a printer, etc. by contact to the icon which the operation screen for printing provided with two or more icons was displayed, and was displayed, The memory 12D which memorizes the controller 12C which controls the whole scanner, the image data read by the scanner part 12A, etc., And it has the input/output port 12E for outputting and inputting data, and these scanner parts 12A, the display panel 12B, the controller 12C, the memory 12D, and the input/output port 12E are mutually connected via the bus. The input/output port 12E is connected to the network 10 via the communications control unit 12F which communicates with the apparatus connected to the network via the network.

[0021]The user interface which inputs data from the operation screen for printing, It separates into the attribution information of the printer 16 expressed with the user interface part article which is an element of screen information, such as an icon, a button, a scroll bar, and a frame, and the text data, A user interface part article is memorized by the memory 12D of a scanner, and it is remembered by the server 14 that the attribution information of the printer 16 is mentioned later. Screen information can be created, for example in HTML (Hypertext Makeup Language).

[0022]Thus, by dividing a user interface into a user interface part article and attribution information, separating into the scanner 12 and the server 14, and memorizing, When transmitting the data which constitutes a user interface to the scanner 12 from the server 14, data volume which transmits to the scanner 12 from the server 14 can be lessened, and, thereby, a user interface can be promptly displayed on the display panel 12B. The program of the manipulation routine mentioned later is also memorized by the memory 12D.

[0023]Without dissociating and memorizing, the user interface which displays the operation screen for printing generates all the information by the server 14, and it may be made to transmit to the controller 12C of the scanner 12.

[0024]The electronized image data which replaced with this scanner 12 and was recorded on storages, such as FDD and CD-ROM, etc. may be read and inputted, Image data may be inputted from a facsimile or a database using a personal computer, and an image data input may be carried out using the e-mail software installed in the personal computer.

[0025]printer 161, 162, and ... 16n -- abbreviated -- since a point which is the same composition and is different is only an attribute, one printer is explained with reference to drawing 3, and explanation is omitted about other printers. Especially in the following, when explaining without distinguishing each printer, the subscript of a numerals end is omitted and the printer 16 is called.

[0026]As shown in drawing 3, the printer 16 records an electrostatic latent image

on a photo conductor, and develops an electrostatic latent image using a monochrome toner or color toner, The printer section 16A which transfers and outputs the developed picture to the recording form which is a recording medium, The display panel 16B for operating the printer 16 by contact to the icon of the operation screen which the operation screen was displayed and was displayed, etc., The memory 16D which memorized beforehand the program of the manipulation routine etc. which the controller 16C which controls the printer 16 whole, the image data which received, the data of an output form, etc. are memorized, and are mentioned later, And it has the input/output port 16E for outputting and inputting data, and these printer sections 16A, the display panel 16B, the controller 16C, the memory 16D, and the input/output port 16E are mutually connected via the bus. The input/output port 16E is connected to the network 10 via the communications control unit 16F which communicates with the apparatus connected to the network via the network.

[0027]FDD, CD-ROM which are external storages at the server 14, Or the database 24 which memorized the attribution information etc. of all the printers 16 connected to the driver 20 in which the writing which reads and inputs the data recorded on CD-RW etc. is also possible, the facsimile machine 22, and the network is connected.

[0028]The server 14 memorizes the controller 14A which controls the whole server, and the received data, as shown in drawing 4, and. A mailer which transmits and receives e-mail, a program which controls transmission and reception of a facsimile machine, And the memory 14B which memorized beforehand the program of the manipulation routine etc. which are mentioned later, The interface 14C connected to the driver 20 which comprised a CD-ROM writer etc., The drive 14D which drives the facsimile machine 22, the file system 14E connected to the database 24, And it has the input/output port 14F for outputting and inputting data, and these controllers 14A, the memory 14B, the interface 14C, the drive 14D, the file system 14E, and the input/output port 14F are connected mutually. The input/output port 14E is connected to the network 10 via the communications control unit 14G which communicates with the apparatus connected to the network via the network.

[0029]The database 24 may form the database server connected to the network independently [the server 14], and may connect it to this database server.

[0030]client 181, 182, and ... 18n comprises a personal computer provided with the communications control unit which communicates with the apparatus connected to the network via the each network.

[0031]Hereafter, with reference to drawing 5 - drawing 7, the scanner of this embodiment, a server, and the manipulation routine performed by each controller of a printer are explained. Since this manipulation routine is divided into each routine of the registration processing of attribution information, operation screen display processing, printing directions processing, and a printing job, it divides and it explains the following of each.

[0032] [Registration processing of attribution information] The registration processing of attribution information is processing which registers the attribution information of the printer 16 connected to the network into the database connected to the server 14.

[0033]When the printer 16 is connected to the network 10, By operating the management tool software with which the server 14 was equipped from the client 18 connected with the navigational panel (not shown) and the server 14 which were provided in the server 14 via the network, attribution information registration processing which registers the attribution information of the printer 16 into the server 14 is performed. Namely, in the server 14 with the directions to said management tool software. In Step 108 shown in drawing 6, if judged as an attribution information registration processing demand, in Step 109, the registration processing requirement signal which requires the registration processing of printer attribution information of the printer 16 from the server 14 will be transmitted.

[0034] In the printer 16, if it judges whether the registration processing requirement signal was received at Step 100 of drawing 5 and a registration processing requirement signal is received, in Step 102, the attribution information of the printer 16 will be transmitted to the server 14 from the printer 16.

[0035] If it judges whether the attribution information transmitted from the printer 16 at Step 110 was received and attribution information is received, in Step 112, the server 14 will control the file system 14E, and will register the attribution information of the printer 16 into the database 24.

[0036] Attribution information is transmitted to the server 14 from the printer 16 automatically [when the printer 16 is connected to the network 10], Registration of attribution information may be made to be performed in the database 24 automatically, and it may be made to register into a database the attribution information which detected and detected the attribution information of the printer 16 by the server 14. The display panel 16B provided in the printer 16 can be operated, and the attribution information of the printer 16 can also be registered into the server 14. The attribution information of all the printers 16 connected to the network 10 is registered into the database 24 connected to the server 14 by this.

[0037] The information which shows the object for black-and-white printing, or the object for color printing as attribution information of the printer 16, The information which shows whether there is any double-side printing function, the information which shows whether there are any finishers (the function stopped by staple, the function to make a punch hole, etc.), The information which shows the size of the paper in which high resolution or a low resolution is shown, and which can carry out information and printing, The information about output forms, such as color characteristic information, including a color map characteristic when it is the information on the kind of font with which each printer is provided, and a color printer, color adjustment information, etc., Information on the setting position of each printer (a story, a part, etc. which are installed in one building) There is information for identifying printers, such as information on network setting out, such as IP addresses, such as a part currently installed in a different building, and information on a printer name, and all the information about the output form and output condition of the printer 16 is registered into a database as attribution information.

[0038] [Operation screen display processing] If the scanner 12 is started, the initial screen first shown in drawing 8 will be displayed on the display panel 12B of the scanner 12, and the menu screen for the service selection shown in drawing 9 below will be displayed on it. If the service selection button 200 displayed by the icon is displayed and the button 200A is clicked as shown in drawing 9, copy (printing) service will be chosen, and scanner service will be chosen as this menu screen if the button 200B is clicked.

[0039] If the button 200A is pushed from the menu screen shown in drawing 9 currently displayed on the display panel 12B of the scanner 12 and copy service is chosen from a menu by an operator, the operation screen for specifying the output method/preservation destination shown in drawing 10 will be displayed. This operation screen is constituted including the set part 204 for setting up the group display part 202, an output method, etc. which divide and display the printer 16 connected to the network 10 on the group beforehand registered by operation of the operator, and the ten key part 206, The selection buttons 205, such as an output method displayed by the icon, are displayed on the set part 204.

[0040] "A split output is not carried out", [which is outputted by one set of a printer as a choice of an output method without dividing one job] The number of input parts "carrying out an equivalent output (equivalent output)", [which is divided so that the number of outputting parts of each printer may become equivalent, and is outputted to two or more sets of printers] "A multiple address output being carried out (multiple address output)", [to which same

number of copies as the number of input parts is outputted from each printer] There is "a best fit being carried out (best fit)". [which chooses and outputs the printer which specified the conditions of "number of copies being specified individually" (individual number-of-copies specification) and an output of having specified two or more printers and specifying number of copies for every printer, and fitted conditions most] One of output methods can be chosen by clicking the selection button 205. The operation screen shown in drawing 10 shows the state where the "multiple address output" to which same number of copies as the number of input parts is outputted was chosen from each printer as an output method.

[0041] If one of the groups of the printer 16 displayed on the group display part 202 of the operation screen by the operator is chosen, It is judged that the operation screen display instruction for printing occurred in Step 154 of drawing 7, and the operation screen generating request signal for generating the operation screen for printing from the scanner 12 to the server 14 in Step 156 is transmitted. It may be made to transmit only the information which shows that the group of the printer 16 was chosen to the server 14 from the scanner 12.

[0042] If it is judged that the operation screen generating request signal transmitted from the scanner 12 at Step 114 of drawing 6 was received in the server 14, The status of the printer 16 connected to the network 10 in Step 116 is checked, The attribution information which generated the attribution information for generating the operation screen for printing of the directed printer 16 based on an operation screen generating request signal and the attribution information of the printer 16 registered, and was generated on the scanner 12 in Step 118 is transmitted.

[0043]. As an operation screen generating request signal, display all the attribution information of the printer 16 connected to the network 10. The signal of displaying the attribution information of only the printer 16 of the group who specified beforehand which displays only the attribution information of the printer 16 provided with the color printing function can be transmitted.

[0044] At this time, by the check of the status of the specified printer 16, power OFF, When the printer 16 downed by the error of the paper not being stored by a paper jam and the tray, etc. exists, the server 14 generates the attribution information for generating the operation screen for printing so that the attribution information of the downed printer 16 may not be displayed. It may be made to generate the information on which the operation screen for printing which displays the error information which shows that it is downed is displayed about the downed printer 16 at this time.

[0045] When it is judged that attribution information was transmitted to the scanner 12 and the attribution information from the server 14 was received in Step 158 of drawing 7 from the server 14, the scanner 12, The operation screen for printing which compounds the user interface part article in which drawing information, including the button etc. which have been memorized in the attribution information expressed with the text data for generating the received operation screen for printing and the memory 12D, is shown, and is shown in drawing 11 is generated, It displays on the display panel 12B by making into a user interface the operation screen for printing generated in Step 160. The group display part 202, paper size which this operation screen for printing described above, It is constituted including the parameter setting section 208 for setting up the output parameter which shows image data output forms, such as expanding-and-contracting magnification, and said ten key part 206, and the parameter selection button 210 displayed by the icon is displayed on the parameter setting section 208.

[0046] If the operation screen for printing where the operator was displayed is operated and screen changing instruction of the operation screen for printing is performed, it will progress to Steps 164 and 166 from Step 162 of drawing 7, and it progresses to Steps 120 and 122 from Step 114 of drawing 6, and operation

screen change processing is performed. In this operation screen change processing, as Steps 156-160 of drawing 7 and Steps 114-118 of drawing 6 explained, According to operation of the display panel 12B of the scanner 12, a new operation screen generating request signal is transmitted to the server 14, the attribution information for generating the operation screen for printing newer than the server 14 is generated, and the generated attribution information is transmitted. For this reason, the display of the operation screen for printing is changed according to the operation using the operation screen for printing of the display panel 12B of the scanner 12.

[0047] If this operation screen change processing is explained still in detail, the group of the printer 16 displayed on the group display part 202 of the operation screen for printing by operation of the operation screen for printing shown in drawing 11 of the display panel 12B of the scanner 12 will be chosen, If the operation screen generating request signal for setting output instruction to the printer which specifies the printer 16 belonging to a group and belongs to the specified group is transmitted, The logical product of the attribution information of the printer 16 which belongs to a group in the server 14 calculates, attribution information common to each group is chosen, and common attribution information is transmitted to the scanner 12. The operation screen for printing which displays attribution information common to the group and this group of the printer 16 by this is newly generated, and is displayed.

[0048] When registering two or more printers 16 as one group, If the operation screen generating request signal for displaying the printer 16 which chose the attribution information showing a function to carry out grouping of the operator to, and was provided with this attribution information is transmitted to the server 14, Since the printer 16 provided with the selected attribute is displayed altogether, grouping of the operator can be carried out by choosing the printer 16 to carry out grouping from a screen, and performing grouping directions to the server 14.

[0049] The button "does not carry out a split output" since it outputs on the screen shown in drawing 10 without an operator's dividing one job as an output method is chosen, Selection of one of the groups of the printer 16 displayed on the group display part 202 will display a list (not shown) of the printer 16 belonging to the selected group. Or a list (not shown) of the printer 16 of the simple substance in the state where grouping is not carried out to the group display part 202 may be made to be displayed. If each printer 16 is chosen from this printer list, the attribution information of the printer 16 selected in the server 14 will be chosen, and it will be transmitted to the scanner 12, The operation screen for printing which displays the attribution information of the selected printer 16 is generated, and it is displayed on the display panel 12B of the scanner 12.

[0050] In [if the display "a best fit" of the printer 16 which specified the attribution information of the printer 16 to output, i.e., the conditions of an output, as an output method, and fitted conditions most is chosen] the server 14, The logical sum of the attribution information of the printer 16 belonging to the group selected as an output destination change calculates, and the attribution information of the printer 16 based on this result of an operation is transmitted to the scanner 12, and the operation screen for printing is generated and it expresses to the display panel 12B as the scanner 12. All the attribution information which can choose an operator with this screen can be looked through. The logical operation of attribution information can be performed for every attribute item which the printer belonging to a group has.

[0051] When performing a best fit output, the logical sum of the attribution information of the calculated printer 16 is displayed on the display panel 12B of the scanner 12, but. When the number of logical sum becomes beyond a predetermined value, one icon (for example, icon of the square shape "others" was horizontally indicated to be) which displays the attribution information exceeding a predetermined value collectively is provided, The attribution

information which exceeds a predetermined value according to a click and pulldown operation of this icon is displayed in detail.

[0052] If "individual number-of-copies specification" is chosen as an output method and one of the groups of the printer 16 displayed on the group display part 202 is chosen, the individual number-of-copies assigning screen shown in drawing 12 belonging to the selected group which displays number of copies every printer 16 will be displayed. The operator can set up the number of outputting parts for every printer from this individual number-of-copies assigning screen. And the operation screen for printing is displayed every printer 16 to output.

[0053] An "equivalent output" is chosen as an output method, and if one of the groups of the printer 16 displayed on the group display part 202 is specified, the operation screen generating request signal for carrying out grouping with the scanner 12 will be transmitted. In the server 14, the logical product of the attribution information of the printer 16 belonging to a group calculates, attribution information common to each group is chosen, and common attribution information is transmitted to the scanner 12. The operation screen for printing which displays attribution information common to the group and this group of the printer 16 by this is generated and displayed. It is guaranteed by displaying common attribution information in the case of an equivalent output or a multiple address output that the same output is obtained from all the printers.

[0054] [Printing directions processing] With the operation screen for printing shown in drawing 11, after an operator checks the attribution information of the printer 16, it sets up the output parameter which shows image data output forms, such as a paper size and expanding-and-contracting magnification, from the operation screen for printing, and performs printing directions.

[0055] If the printer 16 outputted with an operator is specified as above-mentioned, the output parameter which shows an image data output form is set up and printing directions are performed. The acknowledge signal for checking whether printing with the printer 16 which it was judged as those with printing directions at Step 162 of drawing 7, and was specified at Step 168 is possible which can be printed is transmitted to a server.

[0056] If it is judged that the acknowledge signal which can be printed was transmitted to the server 14 from the scanner 12, and the acknowledge signal which can be printed was received at Step 124 of drawing 6 (those with printing directions), If the status of the printer 16 specified in Step 126 is checked and it is judged from this status at Step 128 that printing is possible, the signal which can be printed will be transmitted to the scanner 12 at Step 132. On the other hand, when it is judged at Step 128 that printing is impossible, in Step 130, a printing improper signal is transmitted to the scanner 12.

[0057] In the scanner 12, in Step 170 of drawing 7, when it judges whether the signal which can be printed was received and the signal which can be printed is received, it is judged whether the start button was pushed by the operator at the following step 174, and image reading (scan start) was directed. If it is judged that there were image reading directions at Step 174, the picture recorded on the manuscript which controlled the scanner part 12A by Step 176, and was set will be read by one operation, That is, a series of image data is read as common image data, and it memorizes in the memory 12D of a scanner as electronized image data. And the image data read from the output form and the scanner part 12A which were inputted from the operation screen in Step 178 is transmitted to the server 14.

[0058] On the other hand, when it is judged that the printing improper signal was inputted in Step 170, If re-specification of the printer 16 that point so that re-specification of the printer 16 may be performed to an operator in Step 172, and an operator operates and outputs the display panel 12B is performed, Progress to Step 168 from Step 162 like the above, and the acknowledge signal for checking whether it can print to the server 14 which can be printed is transmitted, The signal which can be printed is received in Step 170, when it is judged that image

reading was directed in Step 174, at Step 176, the image data recorded on the manuscript is read and an output form and image data are transmitted to the server 14 in Step 178.

[0059]As specification of the printer 16, as explained above, the one printer 16 is specified or printed matter can be simultaneously outputted from each of the printer 16 which specifies one group and belongs to the group who specified.

[0060]When carrying out grouping as mentioned above, two or more printers 16 provided with a different function as an attribute are set up beforehand belong to the same group, It may be made to output printed matter based on the same image data from each of the printer 16 provided with the color output function, and the printer 16 provided with monochrome output functions. In this case, from the printer 16 provided with an one-copy output and monochrome output functions from the printer 16 provided with the color output function, cost can be reduced by specifying an output like the remaining number-of-copies output as compared with the case where a number color output is carried out for all.

[0061]The number of outputting parts may be specified according to size (for example, one copy by A4). According to remaining number of copies and a recording surface, the number of outputting parts may be specified by B4 (for example, number of copies of the remainder [both sides] in one copy and one side), and the number of outputting parts may be specified according to the existence of a finisher (they are one copy and remaining nothing number of copies for example, with a stapler).

[0062]In directing to perform one job with two or more printers 16, The job for every printer 16 is respectively located in the lower layer of one job independently, and the upper job and lower layer Mr. job ****s of all the can perform by operations (a start, a stop, resumption, change, deletion, etc.) of the upper job. About a lower layer job, it is operated independently respectively and may be made to perform independently respectively.

[0063] [Printing job] If it is judged in Step 134 of drawing 6 that the output form and image data from the scanner 12 were received in the server 14, It is judged whether it can print from the status which checked the status of the printer 16 with which execution of the job was specified in Step 136, and was checked at Step 138. By an error occurring to the printer 16 with which printing was specified, if printing is impossible, in Step 130, a printing improper signal will be transmitted to the scanner 12. As it was judged by this in Step 180 in the scanner 12 that the printing improper signal was received after an output form and image data transmission and being explained above by it, If re-specification of the printer 16 that point with an operation screen so that re-specification of the printer 16 may be performed to an operator in Step 172, and an operator operates and outputs the display panel 12B is performed, When the signal which can be printed is received and a scan start is directed, a picture is read and an output form and image data are again transmitted to the server 14. And it is repeated and judged whether it returned to Step 180 and the printing improper signal was received until it is judged that predetermined time passed at Step 182.

[0064] Since there is usually no change of an output form and image data even if the printer 16 is re-specified after an output form and image data are transmitted to the server 14 from the scanner 12, It may be made to use the output form and image data which have already been transmitted to the server 14 as it is, without transmitting an output form and image data to the server 14 again. When an output form must be changed by re-specification of the printer 16, only an output form may transmit and may be changed.

[0065] On the other hand, when it is judged at Step 138 that printing is possible, the image data output form signal which shows a paper size, number of copies, etc. to the printer 16 with which printing was specified from the server 14 in Step 140, and the image data inputted from the scanner 12 are transmitted via the network 10. In Step 104 of drawing 5, if the printer 16 is judged that the output form and image data which were transmitted from the server 14 were received, it

will be the output form specified in Step 106, and will output the recording form which formed the picture based on image data in the recording form and with which the picture was formed.

[0066]As explained above, since the attribution information of the printer connected to the network is registered into the database of a server, with the printing system of this embodiment, the attribution information of the printer connected to the network from the scanner can be pulled out. The attribution information of the printer connected to the network can be pulled out from other clients other than a scanner.

[0067]Since the display panel which functions as a user interface which inputs the data of the printing form of a printer, etc. by contact to the icon which the operation screen which equipped the scanner with two or more icons was displayed, and was displayed is provided, By directing in the operation screen displayed on this display panel, when inputting image data with a scanner, After setting up an output parameter first operate the usual copying machine, it becomes possible to perform processing from reading of a manuscript to printing automatically only by pushing a start button.

[0068]Since the attribution information of the printer connected to the network is registered into the database of a server, the attribution information of the printer connected to the network from the scanner can be pulled out. The attribution information of the printer similarly connected to the network can be pulled out from other clients other than a scanner.

[0069]The operation screen generating request signal for [which all displays the attribution information of some printers] being connected to the network in the server, And generate the text data for generating an operation screen based on the attribution information of the printer connected to the network, and transmit to a scanner, and. Since it displays on a display panel by making into a user interface the operation screen which generated and generated the operation screen in the scanner based on the text data etc. which were transmitted, An operation screen common also about two or more printers provided with a different attribute can be displayed, and this operation screen can be operated efficiently.

[0070]In particular, in the case of an equivalent output or a multiple address output, if the logical product of the attribute which two or more printers have is displayed and an attribute is chosen in the range of a logical product, it will be guaranteed that the same output is obtained from two or more printers. By displaying the logical sum of the attribute which two or more printers have, the total range of a selectable attribute can be shown and selection of the optimal printer becomes easy.

[0071]Although the example displayed on a display panel by making into a user interface the operation screen which generated and generated the operation screen in the scanner in this embodiment based on the text data etc. which were transmitted was explained, A user interface can be provided in a client or a composite machine, and it can also be operated from a client or a composite machine. For example, when a composite machine is connected to the printing system of this embodiment, it usually operates as an independent composite machine and "network copy mode" is directed, It can also constitute so that the composite machine concerned may operate as an user interface apparatus, a picture input device, or an image output device. Usually, although the composite machine concerned operates as a composite machine which displays a user interface picture original with a composite machine on a display panel, and operates independently, The acquisition request of the information for generating a user interface picture to the server connected via the network, when the directions which shift to "network copy mode" are made is advanced, The user interface picture which can direct setting out and the output form over other apparatus connected to the display panel of a composite machine via the network based on the information transmitted from the server is displayed. If a manuscript is made to read by the image read section of a composite machine when selection of the printer of an output destination change and setting out of an output form are performed from

this screen and start directions of a network copy are performed. The read picture and the information about an output destination change printer or an output form are transmitted to a server, and it is also possible to carry out print processing.

[0072] In this embodiment, after setting up an output parameter first, constituted so that processing from reading of a manuscript to printing might be automatically performed only by pushing a start button, so that the usual copying machine might be operated, but. After reading and accumulating a picture from a scanner by scan service so that it may indicate below, the print output of the accumulated picture can also be carried out by performing reprint directions.

[0073] In accumulating the picture recorded on the manuscript, by pushing the "scanner" button 200B in the menu screen shown in drawing 9, scan service is chosen, a manuscript is set to the scanner part 12A, and it pushes a start button. Thereby, it is judged as those with image reading directions, and the picture which the scanner part 12A was controlled and was recorded on the manuscript is read. The read image data is memorized by the memory 12D of a scanner as electronized image data. In this case, so that the image data used with a printer with a higher function may be obtained, For example, when the printer (color printer) provided with the color output function and the printer (monochrome printer) provided with monochrome output functions are connected. When the high resolution printer and the low resolution printer are connected so that the image data for color printers may be obtained and, it is preferred to read a picture so that the image data for high resolution printers may be obtained.

[0074] The above-mentioned image reading process is unnecessary, and what is necessary is just to memorize the image data read from the external storage using the reading device which is not illustrated as common image data in the memory 12D by one operation, when image data inputs image data from the external storage memorized beforehand.

[0075] Next, in printing the picture accumulated by scan service, it chooses re-print service by pushing the "reprint" button 200C in the menu screen shown in drawing 9. In re-print service, it becomes possible to carry out a re output by performing processing which indicated the desired picture above [printing directions processing] from the picture accumulated in the memory 12D of the scanner, and same processing.

[0076] In this embodiment, once memorize the picture read with the scanner in the memory 12D of the scanner 12, constituted so that it might transmit to the server 14 from the memory 12D at the time of the output to the printer 16 and might be transmitted to each printer 16, but. At the time of manuscript reading, the read picture is transmitted to the server 14 and it saves at the server 14, and it may constitute so that it may be transmitted to each printer 16 at the time of the output to the printer 16. The picture read with the scanner is once memorized in the memory 12D of the scanner 12, and it may be made to transmit to a printer directly without the server 14 from the memory 12D at the time of printing.

[0077] Once memorize the picture read by scan service in the memory 12D of the scanner 12, and. When transmitting to the server 14 or the printer 16 and outputting the information which shows the storing position of a picture from the printer 16, it is good also as composition whose server 14 or printer 16 reads a picture based on the information which shows the storing position of the picture.

[0078] Although the example which outputs a picture to a printer above was explained, it can also output to a composite machine or a facsimile machine besides a printer. It may be made to output to other apparatus (for example, cellular phone) connected via the network as an E-mail.

[0079] Although the example for performing OR operation and an AND operation above was explained, an exclusive ethics sum operation etc. may use other arithmetic methods, and may be used combining two or more operations.

[0080]

[Effect of the Invention] According to this invention, the operation screen based on the result of the logical operation of the attribute which two or more image output devices have in the operation screen using a common operation screen about two or more image output devices provided with a different attribute is displayed, and the effect that an operation screen can be operated efficiently is done so.

DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]

[Drawing 1] It is a block diagram showing the outline composition of the printing system of this embodiment.

[Drawing 2] It is a block diagram showing the outline composition of the scanner of this embodiment.

[Drawing 3] It is a block diagram showing the outline composition of the printer of this embodiment.

[Drawing 4] It is a block diagram showing the outline composition of the server of this embodiment.

[Drawing 5] It is a flow chart for explaining the manipulation routine performed with the printer of this embodiment.

[Drawing 6] It is a flow chart for explaining the manipulation routine performed by the server of this embodiment.

[Drawing 7] It is a flow chart for explaining the manipulation routine performed with the scanner of this embodiment.

[Drawing 8] It is a figure showing the initial screen displayed on a display panel at the time of scanner starting.

[Drawing 9] It is a figure showing the menu screen for service selection.

[Drawing 10] It is a figure showing the operation screen for specifying an output method/preservation destination.

[Drawing 11] It is a figure showing the operation screen for printing.

[Drawing 12] It is a figure showing the individual number-of-copies assigning screen for specifying the number of outputting parts for every printer.

[Description of Notations]

10 Network

12 Scanner

14 Server

161, 162, and ... a 16n printer

181, 182, and ... an 18n client

20 Driver

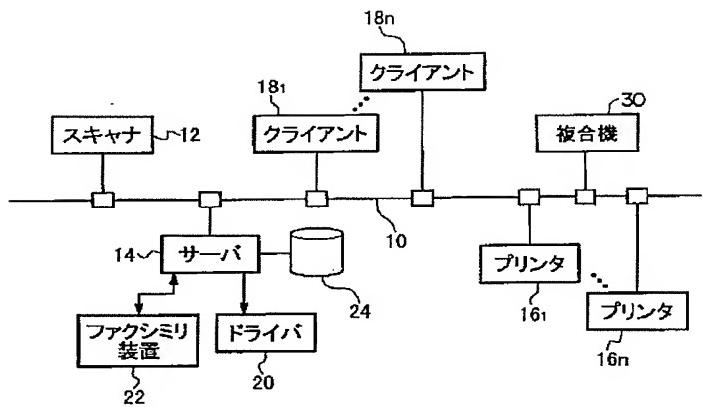
22 Facsimile machine

24 Database

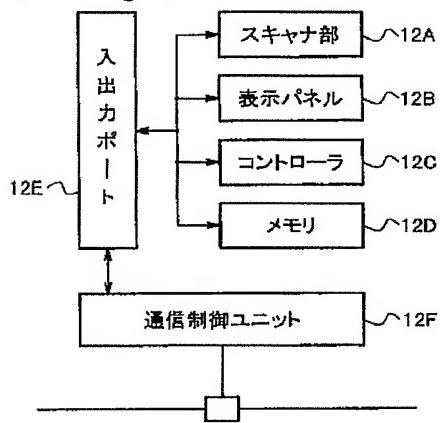
30 Composite machine

DRAWINGS

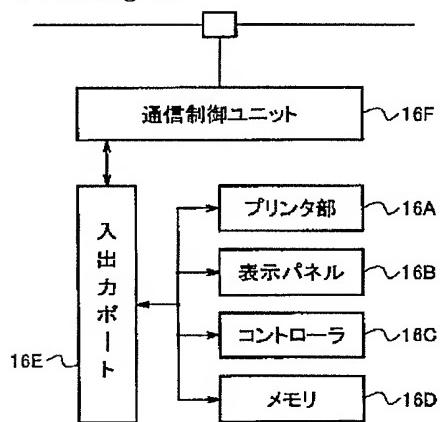
[Drawing 1]



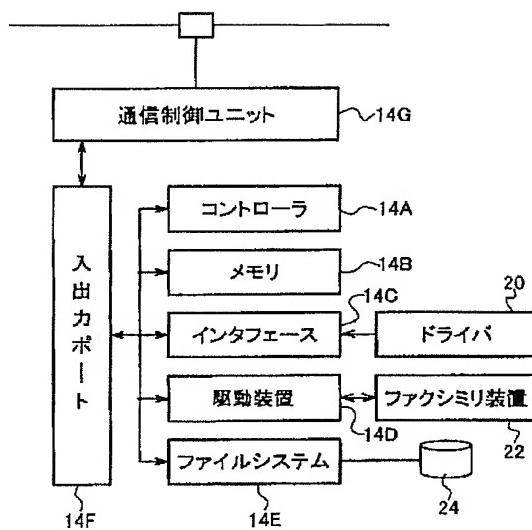
[Drawing 2]



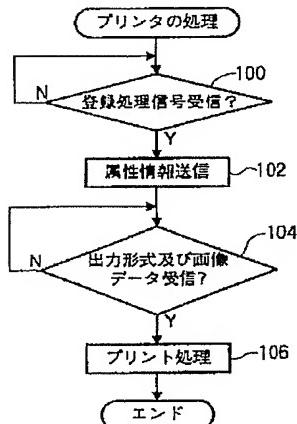
[Drawing 3]



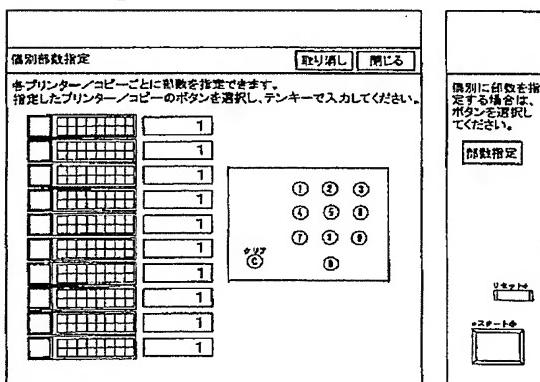
[Drawing 4]



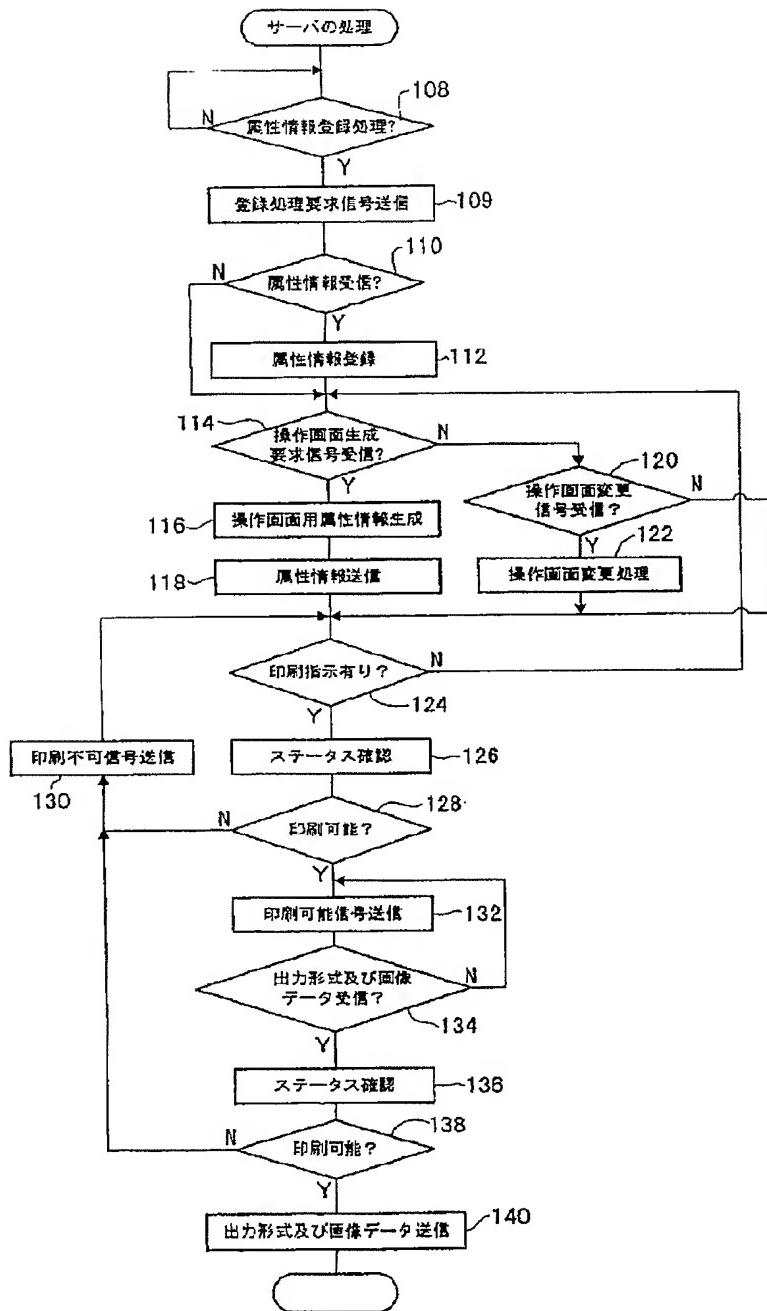
[Drawing 5]



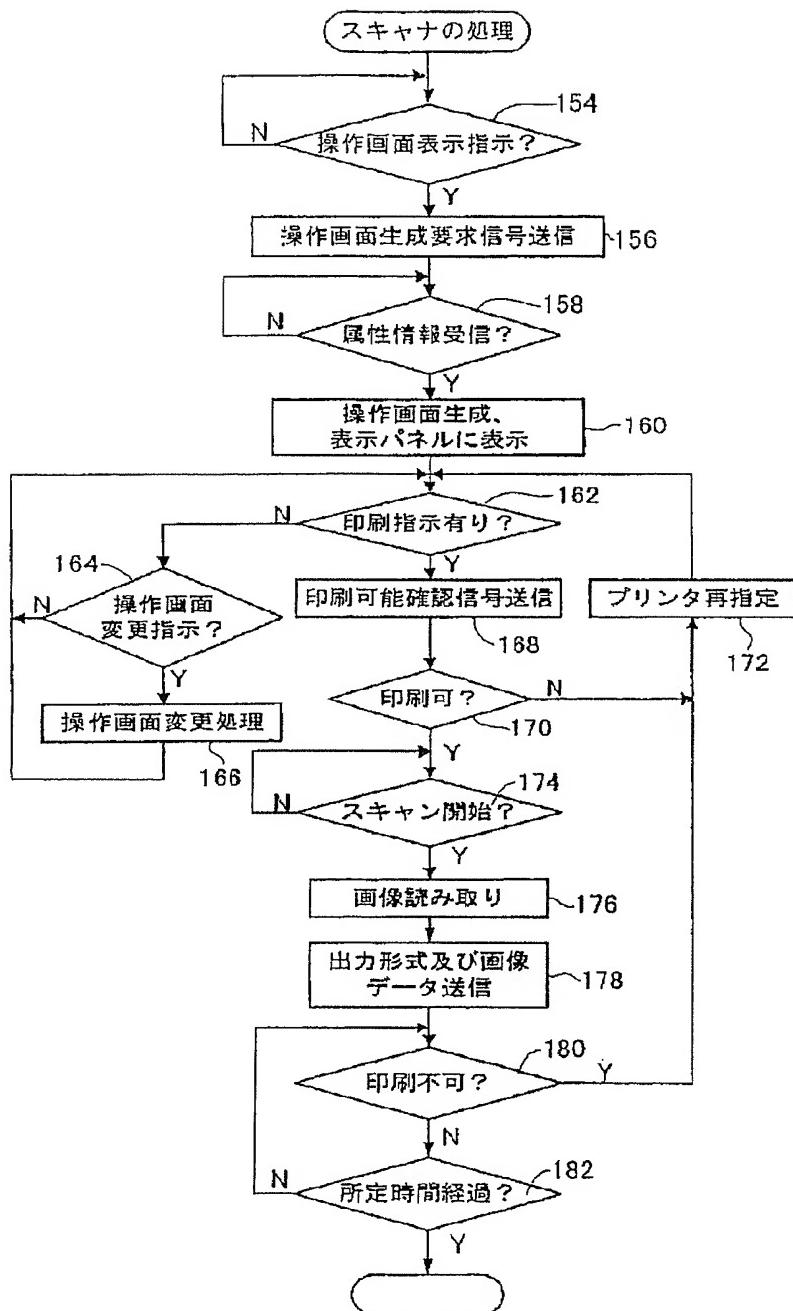
[Drawing 12]



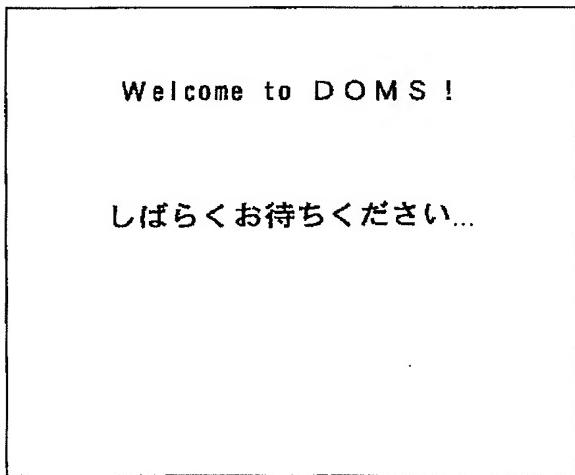
[Drawing 6]



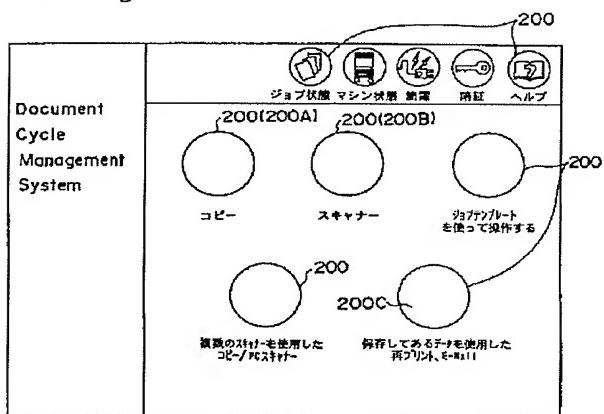
[Drawing 7]



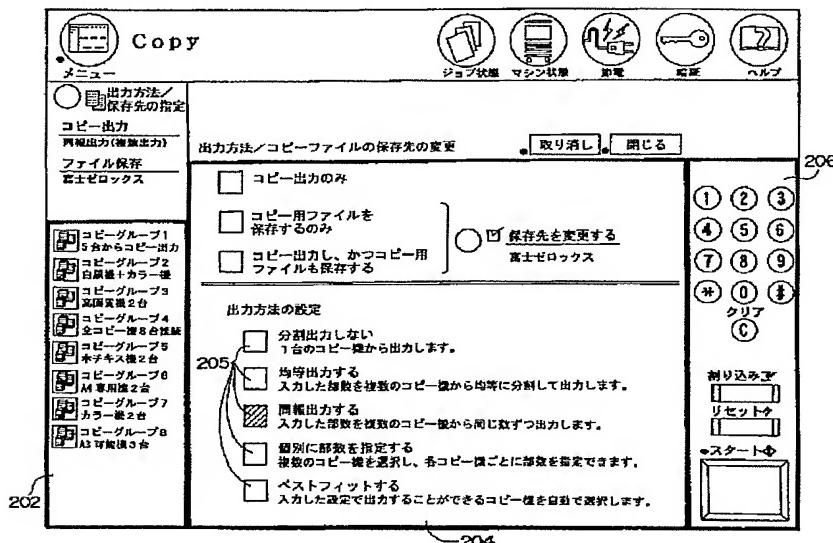
[Drawing 8]



[Drawing 9]



[Drawing 10]



[Drawing 11]

